Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Telecommunications Services Inside Wiring	)	CS Docket No. 95-184
	)	
	)	
Customer Premises Equipment	)	

In the Matter of	)	
	)	
Implementation of the Cable Television Consumer Protection and Competition Act of 1992:	)	MM Docket No. 92-260
	)	
	)	
Cable Home Wiring	)	

COMMENTS OF THE CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION

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TABLE OF CONTENTS

SUMMARY OF POSITION

As the Commission's two *Notices* aptly point out, telephone companies and cable operators have begun to compete against each other in the marketplace. As the services provided by telephone companies and cable operators converge, they will upgrade their systems to deliver voice, data and video programming over a single wire. As a consequence, the type of inside home wiring used by these companies may soon become indistinguishable.

To avoid customer confusion and promote competition, the rules governing home wiring for cable and telephony should be harmonized, so that cable subscribers have the same rights of access and interconnection as consumers of telephone service. Because the Commission's telephone inside wiring rules are much more pro-consumer and pro-competitive than are the cable home wiring rules, harmonized inside home wiring rules should be based on the telephony model. CEMA therefore urges the Commission to change the demarcation point for cable home wiring so as to mirror the demarcation point for telephone inside wiring.

CEMA concurs in the Commission's tentative conclusion that consumers should be given access to cable home wiring prior to service termination. Such access would afford consumers the freedom to select a vendor other than the incumbent cable operator to install and maintain their cable wiring. Pre-termination access, along with affording consumers the right to purchase on-premises cable wiring from competing providers at the time cable service is initiated, will promote consumer choice, foster competition among video service providers, reduce maintenance fees and service charges, encourage innovation, and facilitate the provision of more than one type of service by different companies.

CEMA also agrees with the Commission's assessment that uniform, technical standards for jacks and other connectors that provide the interface for cable networks would ensure network integrity, decrease the frequency of malfunctioning connections, simplify the use of existing wire by alternative service providers, and thus promote competition, higher service quality, and lower prices. The adoption of such interfaces, however, should be based on industry-developed standards.

The unbundling and deregulation of telephone CPE has produced substantial benefits for the public. CEMA submits that the same public interest benefits would accrue if cable CPE, including those devices now being provided exclusively by cable operators, were similarly deregulated and consumers were given the right to connect such equipment to the cable operators' networks. The Commission's current rules, however, do not require cable operators to permit consumers to connect their own CPE to the cable network. As a consequence, consumers are not free to use competitively supplied CPE, such as set-top boxes, in connection with traditional one-way cable programming. Perhaps more important, particularly as cable networks begin to offer new and innovative two-way services, consumers are also not free to use CPE of their own choosing in connection with these new service offerings.

The Commission should therefore authorize the interconnection of competitively supplied cable CPE -- that conforms to certain minimal technical standards -- to cable networks. These technical standards are, for the most part, already embodied in the Commission's rules. To the extent that additional standards are deemed necessary, they should be limited to ensuring that: (1) competitively supplied CPE does no harm to the cable system, other subscribers, or protected uses of the radio spectrum; and (2) the equipment does not permit or facilitate theft

of cable programming. The Commission should prohibit any cable operator restrictions on the interconnection of equipment that satisfies these standards.

Any rules promoting the competitive availability of cable CPE must protect cable operators against signal theft. Key to the success of these rules will be the prescription of a standard interface that will permit the interconnection of competitively supplied CPE and the security devices of cable systems. CEMA therefore concurs in the Commission's conclusion that "special rules must govern subscribers' access to and connection of CPE with access control functions that are consistent with" the Decoder Interface standard being developed as a result of ET Docket No. 93-7.

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Television Consumer Protection	)	
and Competition Act of 1992:	)	
	)	
Cable Home Wiring	)	

COMMENTS OF THE CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION

The Consumer Electronics Manufacturers Association ("CEMA") hereby submits the following consolidated comments in response to the Notice of Proposed Rulemaking which the Commission issued in CS Docket No. 95-184 ("*CPE Notice*"), as well as to the First Order on Reconsideration and Further Notice of Proposed Rulemaking in MM Docket No. 92-260 ("*Home Wiring Notice*").[1] CEMA has decided to file consolidated comments in these

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[1] *See Telecommunications Services Inside Wiring -- Customer Premises Equipment*, Notice of Proposed Rulemaking, FCC 95-504, CS Docket No. 95-184 (released Jan. 26, 1996) [hereinafter "*CPE Notice*"]; *Implementation of the Cable Television Consumer Protection and Competition Act of 1992 -- Cable Home Wiring*, First Order on Reconsideration and Further Notice of Proposed Rulemaking, FCC 95-503, MM Docket No. 92-260 (released Jan. 26, 1996) [hereinafter "*Home Wiring Notice*"].

proceedings because the Commission's two *Notices* raise related cable home wiring and equipment issues.

As set forth more fully below, CEMA supports the Commission's tentative decision to conform its cable home wiring and equipment rules to those applicable to telephony. A harmonization of these rules will benefit consumers by promoting competition among video programming, home automation, and telecommunications service providers, as well as among equipment manufacturers.

I. INTRODUCTION

CEMA, formerly known as the Consumer Electronics Group of the Electronics Industries Association, is the principal trade association of the U.S. consumer electronics industry. CEMA's members design, manufacture, import, distribute and sell a wide variety of consumer electronics equipment, including television receivers, cable set-top boxes, VCRs, camcorders, audio equipment, cordless telephones, personal computers, answering machines, and in-home network wiring and equipment. As an association of companies that manufacture consumer electronics equipment for use with competing video and telecommunications services, including cable and telephone service, CEMA has an interest in ensuring that consumers have the flexibility to use their inside home wiring in ways which best meet their needs, including the interconnection and use of competitively supplied equipment.

As the Commission's two *Notices* aptly point out, telephone companies and cable operators have begun to compete against each other in the marketplace. The Telecommunications Act of 1996 will further this competition by eliminating the barriers between common carrier telephone service and pre-packaged, content-based cable service. The

Act authorizes telephone companies to provide cable service in their franchise areas[2] and prohibits municipalities from restricting the rights of cable operators to provide telephone service.[3] As the services provided by telephone companies and cable operators converge, they will upgrade their systems to deliver voice, data and video programming over a single wire. As a consequence, the type of inside home wiring used by these companies may soon become indistinguishable.[4]

To avoid customer confusion and promote competition, the rules governing home wiring for cable and telephony should be harmonized, so that cable subscribers have the same rights of access and interconnection as consumers of telephone service. Because the Commission's telephone inside wiring rules are much more pro-consumer and pro-competitive than are the cable home wiring rules, harmonized inside home wiring rules should be based on the telephony model. CEMA therefore urges the Commission to:

(1) change the demarcation point for cable home wiring so as to mirror the demarcation point for telephone inside wiring;

(2) give consumers the right to provide and install their own cable wiring and to access cable operator-owned wiring on their premises prior to service termination; and

(3) adopt industry-developed technical standards for jacks and other connectors needed to interface with cable systems.

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[2] Telecommunications Act of 1996, Pub. L. No. 104-104, § 302, 110 Stat. 56 (1996).

[3] *Id.* at § 303.

[4] *See CPE Notice* at ¶ 2.

CEMA also urges the Commission to deregulate cable customer-premises equipment ("CPE") and establish the right of consumers to provide and interconnect competitively-supplied CPE with cable operator facilities.

II. THE DEMARCATION POINT FOR CABLE HOME WIRING SHOULD BE THE SAME AS THAT FOR TELEPHONE INSIDE WIRING

CEMA agrees with the Commission that a common demarcation point for both cable home wiring and telephone inside wiring makes logical and technical sense. Different demarcation points for different services that can be delivered over the same inside home wiring are likely to create needless confusion and expense for consumers and service providers, particularly as these and other competing markets begin to merge. A common demarcation point, by contrast, will foster competition by reducing the possibility that overlapping property rights would discourage a consumer from connecting competitively-supplied CPE or from switching to an alternative service provider.[5]

The demarcation point for cable home wiring should therefore be modified to reflect Part 68's definition of demarcation point for telephone service.[6] The demarcation point for telephone inside wiring, which is generally located *inside* -- as opposed to outside -- a customer's premises, is far preferable from a consumer's point of view. Although the existing

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[5] *See id.* at ¶ 12. CEMA recognizes that, in the context of multiple dwelling units ("MDUs"), there may be technical and practical constraints that preclude a common demarcation point for both types of wiring. Although CEMA favors a demarcation policy for MDUs that promotes competition and consumer choice, it will await the comments of other parties to evaluate how best to promote competition in the MDU context.

[6] 47 C.F.R. § 68.3 (1995).

demarcation point for cable home wiring may have been adequate in an environment in which there was only one service provider and only one potential use of that wiring, it has become obsolete as technology has advanced in today's multi-vendor environment.

As the Commission is well aware, consumers can obtain video services from a multitude of potential providers: cable companies, Direct Broadcast Satellites, local exchange carriers, and various "wireless cable" operators (*e.g.*, MMDS). In order to connect one or more of these providers to a single broadband wire on the consumer's premises, sophisticated electronics equipment that requires an independent power source may be required.[7] Consumers will also likely choose to use their home wiring to support a multiplicity of intra-home audio, video and home automation distribution functions. This, too, will require sophisticated control equipment. The most suitable location for such equipment is inside the subscriber's premises. The complex integrated circuits that comprise such equipment could be severely damaged if exposed to natural elements such as cold weather, sulfur dioxide, salt spray, and ultraviolet light. Moreover, the security of such equipment would be jeopardized if it were located outside the home and subject to theft or vandalism.

Protecting the integrity and security of such equipment is not the only reason to move the demarcation point for cable home wiring inside the customer's premises. Efficiency and coordination issues are also important. For example, a consumer's home automation distribution equipment, which will likely be located inside the consumer's premises, should be

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[7] In this regard, CEMA members are currently developing equipment that will allow multiple uses of a single broadband wire, including the potential for simultaneous use. As the Commission has noted, simultaneous use of the same wire by different service providers will promote competition and increase consumer choice. *Home Wiring Notice* at ¶ 10.

able to communicate with the consumer's video distribution equipment. It would be much less costly and much more efficient if both pieces of equipment were located next to one another inside the consumer's premises, rather than having one inside and the other outside. A common demarcation point would also allow for the development and use of integrated multi-purpose equipment.

The Commission should therefore move the demarcation point for cable home wiring inside the consumer's premises, and provide consumers with the ability to use their home wiring to support all of their audio, video, telecommunications, and home automation needs.

III. CONSUMERS SHOULD BE GIVEN THE RIGHT TO PROVIDE AND INSTALL THEIR OWN CABLE HOME WIRING AND TO ACCESS CABLE OPERATOR-OWNED WIRING ON THEIR PREMISES PRIOR TO SERVICE TERMINATION

CEMA concurs in the Commission's tentative conclusion that consumers should be given access to cable home wiring prior to service termination. Such access would afford consumers the freedom to select a vendor other than the incumbent cable operator to install and maintain their cable wiring. Whenever a monopoly bottleneck is removed (*e.g.*, cable operator-owned inside home wiring), the public benefits. It is for this reason that CEMA's members have consistently advocated giving customers pre-termination access, and:

> allowing consumers to own or lease their cable home wiring and to choose the quality, configuration, and usage of wiring that best suit their needs. Such an approach would limit the exercise of monopoly power in the wiring market and, by making it easier for consumers to shift from cable service to an alternative video distribution service, could help to dissipate market power in the video programming delivery market.[8]

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[8] Comments of the Consumer Electronics Group of the Electronic Industries Association, MM Docket No. 92-260, at 3 (May 18, 1993).

Pre-termination access, along with affording consumers the right to purchase on-premises cable wiring from competing providers at the time cable service is initiated, will promote consumer choice, foster competition among video service providers, reduce maintenance fees and service charges, encourage innovation, and facilitate the provision of more than one type of service by different companies.[9] Like the Commission, CEMA believes that a consumer with pre-termination access to cable home wiring is more likely to consider switching to a competing, or subscribe to an additional, video programming provider.

In addition to providing consumers with greater access to cable home wiring, CEMA favors deregulating the rates for such wiring, in much the same way that telephone inside wiring has been deregulated. If the cable home wiring market is opened to true competition, all providers -- including cable operators -- would compete on a level playing field.[10]

IV. THE COMMISSION SHOULD ADOPT INDUSTRY-DEVELOPED TECHNICAL STANDARDS FOR JACKS AND OTHER CONNECTORS INTERFACING WITH CABLE SYSTEMS

CEMA agrees with the Commission's assessment that uniform, technical standards for jacks and other connectors that provide the interface for cable networks would ensure network integrity, decrease the frequency of malfunctioning connections, simplify the use of existing wire by alternative service providers, and thus promote competition, higher service

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[9] *CPE Notice* at ¶ 43.

[10] *Id.* at ¶ 46. On a related matter, CEMA agrees with the Commission's tentative conclusion that the seven-day-business deadline for removing cable wiring after a customer terminates a service should apply regardless of who subsequently moves into the customer's former premises. *Home Wiring Notice* at ¶ 42.

quality, and lower prices.[11] The establishment of standard connections will also limit the opportunities for anticompetitive abuse on the part of service providers intent on preserving their dominant market position. Standard interfaces will prevent service providers from developing proprietary interfaces with which only their wiring and equipment can properly interconnect. Competition should occur at both the interface and service level, and should not be precluded at the service level by proprietary interface hardware. In this regard, the Commission's judgment should be informed by the many ways in which standard interfaces have benefitted consumers in the telephone context;[12] it should take similar action with respect to cable systems.

Although the "F" connector has become the *de facto* standard for cable jacks, the vast array of new services that are likely to become available as cable and telephony converge may well require new and different connectors. The Commission should be attuned to these developments and formally adopt standards for these interfaces as the need arises, so as to ensure that proprietary interfaces do not develop. The adoption of such interfaces, however, should be based on industry-developed standards.

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[11] *CPE Notice* at ¶ 29.

[12] *See* 47 C.F.R. § 68.213 (1995).

V. CABLE CPE SHOULD BE DEREGULATED AND CONSUMERS SHOULD BE GIVEN THE RIGHT TO USE AND CONNECT COMPETITIVELY SUPPLIED CPE TO CABLE OPERATOR FACILITIES

In its *CPE Notice*, the Commission has correctly noted that the unbundling and deregulation of telephone CPE has produced substantial benefits for the public. More specifically, the Commission has observed that:

> Since the Commission deregulated telephone CPE, the Commission's goals of promoting marketplace entry by communications equipment vendors, increasing competition among these vendors, and producing cost savings for both consumers and common carriers have largely been fulfilled.[13]

CEMA submits that the same public interest benefits would accrue if cable CPE, including those devices now being provided exclusively by cable operators, were similarly deregulated and consumers were given the right to connect such equipment to the cable operators' networks.

Encouraging the availability of competitively-supplied cable CPE is not only sound public policy, it is mandated by both the 1992 Cable Act and the Telecommunications Act of 1996. The 1992 Cable Act directed the Commission to adopt regulations that (1) allow consumers to take full advantage of the features and functions of their televisions and VCRs when using cable service, and (2) promote the commercial availability of set-top boxes and remote controls -- all consistent with the need to protect cable operators from signal theft.[14]

The Telecommunications Act of 1996 similarly directs the Commission:

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[13] *CPE Notice* at ¶ 70. See 47 C.F.R. § 64.702(e) (1995) ("[T]he carrier provision of customer premises equipment used in conjunction with the interstate telecommunications network shall be separate and distinct from provision of common carrier communications services and not offered on a tariffed basis.").

[14] *See* 47 U.S.C. § 544a.

> in consultation with appropriate industry standard-setting organizations, adopt regulations to assure the commercial availability to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.[15]

The purpose of Section 304 is to "ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment [except for those that perform security functions] from the cable system or network operator."[16]

The Commission's current rules, however, do not require cable operators to permit consumers to connect their own CPE to the cable network.[17] As a consequence, consumers are not free to use competitively supplied CPE, such as set-top boxes, in connection with traditional one-way cable programming. Perhaps more important, particularly as cable networks begin to offer new and innovative two-way services, consumers are also not free to use CPE of their own choosing in connection with these new service offerings.

The Commission should not allow restrictions on the use of CPE to diminish the important role which cable systems can play in the National Information Infrastructure. Cable systems, for example, can download the same amount of information from the Internet in 20

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[15] Telecommunications Act of 1996, Pub. L. No. 104-104, § 304, 110 Stat. 56 (1996).

[16] H.R. Conf. Rep. No. 458, 104th Cong., 2d Sess. 181 (1996).

[17] For obvious reasons, consumers are able to connect television receivers and VCRs to cable networks.

seconds that it takes 46 minutes to download using the public switched telephone network.[18] Although cable operators are only beginning to upgrade their systems to accommodate such interactive communications services, the Commission should use this rulemaking to ensure that consumers can take full advantage of new cable services with the CPE of their choice. The competitive availability of cable CPE will, in turn, drive the introduction of new and innovative uses of cable systems, to the benefit of cable operators and consumers alike.

The Commission should therefore authorize the interconnection of competitively-supplied cable CPE -- that conforms to certain minimal technical standards -- to cable networks. These technical standards are, for the most part, already embodied in the Commission's rules.[19] To the extent that additional standards are deemed necessary, they should be limited to ensuring that: (1) competitively-supplied CPE does no harm to the cable system, other subscribers, or protected uses of the radio spectrum; and (2) the equipment does not permit or facilitate theft of cable programming. The Commission should prohibit any cable operator restrictions on the interconnection of equipment that satisfies these standards.

The Commission, however, should not adopt *performance* standards for CPE. These standards are best left to the marketplace. Indeed, about a year ago, CEMA joined forces with the Society of Cable Telecommunications Engineers ("SCTE")[20] to establish a an independent joint committee to develop voluntary industry performance standards for cable

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[18] See Peter Coy, "The Big Daddy of Data Hauler," Business Week, Jan. 29, 1996, at 74.

[19] See, e.g., 47 C.F.R. §§ 15.115 (cable system terminal devices); 15.117 (TV broadcast receivers); 15.118 (cable-ready consumer electronics equipment) (1995).

[20] SCTE is an ANSI standards-setting body whose membership includes equipment manufacturers, cable television operators, telecommunications companies (including Bellcore), and consultants.

television accessories. The Committee has already identified the accessories for which standards should be developed, and the performance parameters that should be measured and evaluated.[21] The Committee is in the process of finalizing benchmarks for each performance parameter that will insure the proper operation of CPE in the cable television environment. The Committee is also in the process of specifying the testing procedures that will be used to evaluate equipment performance.

Once all of the needed performance standards and testing procedures have been finalized, equipment manufacturers will have the opportunity to submit their equipment to the Committee for approval. If, after testing, the equipment is found to meet or exceed all of the Committee's standards, the equipment will receive the Committee's seal of approval, which will be prominently displayed on the equipment's retail packaging. The Committee expects this seal of approval to become quickly and widely known as a standard of excellence. When consumers see the Committee's seal, they will know that the equipment they are buying is of the highest quality. The Committee is also developing a consumer education program that will provide consumers with easy-to-understand literature regarding each piece of approved equipment, as well as the proper way to set-up and use that equipment.

CEMA submits that this type of voluntary industry activity should continue free from Commission involvement. As it has in the past, the Commission should focus solely on those minimum interface standards that are necessary to promote competition. In this regard, the Commission can do much to promote competition in the provision of video-related equipment

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[21] These performance parameters include such things as signal leakage, frequency range/response, return loss, power consumption, and cross modulation distortion.

by requiring cable operators to support the digital ATSC transmission standard ultimately adopted for over-the-air broadcasting.[22] The use of a single digital transmission standard by cable operators will enable manufacturers to achieve economies of scale and thus encourage the development and sale of a wide variety of reasonably priced video equipment. It will also have the added benefit of facilitating the deployment of ATV by minimizing the expense to consumers of transitioning from NTSC to ATV service.

The Commission should also adopt its tentative conclusion that cable CPE used in conjunction with video services provided over narrowband (*e.g.*, copper wire) facilities should be governed by the existing telephone CPE rules.[23] Manufacturers of CPE used to receive video services provided over the existing telephone network already have a fully-developed Part 68 regime to guide them. There is simply no need to "reinvent the wheel" with respect to telephone network interconnection.[24] CEMA awaits the comments of other parties on this issue.

Any rules and policies promoting the competitive availability of cable CPE must protect cable operators against signal theft. The Commission has already made substantial progress towards that end. In ET Docket No. 93-7, the Commission has adopted rules that will facilitate the unbundling of cable CPE, enable customers to "utilize equipment offered by a

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[22] As EIA pointed out in its comments in the ATV proceeding, this will require the cable industry to define a standard for QAM (Quadrature Amplitude Modulation). *See* Comments of the Electronic Industries Association and the Advanced Television Committee, MM Docket No. 87-268, at 12-13 (Nov. 20, 1995).

[23] *CPE Notice* at ¶ 73.

[24] The existing telephone CPE rules, however, may need to be modified to prevent signal theft.

variety of suppliers . . . in a competitive market,"[25] and, at the same time, protect cable operators from signal theft.

Key to the success of these rules is the prescription of a standard interface, called the Decoder Interface, that will permit the interconnection of competitively supplied CPE and the security devices of cable systems.[26] The Commission stated that the Decoder Interface should:

> provide the capability to separate signal access control functions from other functions served through the connector. This capability will allow non-security functions to be provided through new products offered by retail vendors or to be incorporated into TV receivers and VCRs, thereby promoting competition in the market for equipment used to receive cable service.[27]

As the Commission is well aware, CEMA has been working with the cable industry to develop a Decoder Interface Standard (IS-105) that will provide compatibility between consumer electronics equipment and analog cable service, as well as maintain cable signal security. Among other things, the Decoder Interface standard will permit the seamless interconnection of cable security functions with television receivers and other consumer electronics equipment. Importantly, the Decoder Interface will permit the unbundling of all non-security functions from the cable network and permit these functions to be provided in competitively-supplied CPE. CEMA was therefore gratified by the Commission's conclusion that "special rules must govern subscribers' access to and connection of CPE with access control

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[25] *See Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992 -- Compatibility Between Cable Systems and Consumer Electronic Equipment*, First Report and Order, 9 FCC Rcd 1981, 1982 (1994).

[26] *Id.* at 1987-89.

[27] *Id.* at 1988-89.

functions that are consistent with" the Decoder Interface standard.[28] The Commission should adopt the Decoder Interface as a necessary component of any connector standard it ultimately adopts for analog set-top boxes.[29]

VI. CONCLUSION

For all of the reasons set forth above, CEMA urges the Commission to conform its cable home wiring and equipment rules to those applicable to telephony. Specifically, the Commission should:

(1) change the demarcation point of cable home wiring to mirror the demarcation point for telephone inside wiring;

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[28] *CPE Notice* at ¶ 72. The passage of the Telecommunications Act of 1996 should not change this conclusion. IS-105 is fully consistent with Section 301(f) of the 1996 Act, which directs the Commission to ensure that any regulations adopted pursuant to 47 U.S.C. § 544a:

> do not affect features, functions, protocols, and other product and service options . . . including telecommunications interface equipment, home automation communications, and computer network services.

47 U.S.C. § 544a(c)(2)(D). The Conference Report makes clear that this provision is intended to prevent "premature" and "overbroad" government standards that would have a "material" effect on "unrelated" markets. *See* H.R. Conf. Rep. No. 458, 104th Cong., 2d Sess. 169-171 (1996). IS-105 is concerned solely with promoting compatibility between consumer electronics equipment and video programming services. Because IS-105 does not address the interconnection of telecommunications interface equipment, home automation communications, or computer network services, it is incapable of having a "material" effect on these services and equipment.

[29] Similarly, digital set-top boxes should be required to comply with the National Renewable Security Standard ("NRSS") (Draft IS-679) when that standard is formally adopted. NRSS will permit even greater unbundling because security functions will be isolated in a software card that can be used with competitively-supplied hardware.

(2) give consumers the right to provide and install their own cable home wiring and to access cable operator-owned wiring on their premises prior to service termination;

(3) adopt industry-developed technical standards for jacks and other connectors needed to interface with cable systems; and

(4) deregulate cable CPE and establish the right of consumers to provide and connect competitively-supplied CPE to cable operator facilities.

Respectfully submitted,

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